Name:

at1113exam: Expand, factor, and solve quadratics (v306)

1. Solve the equation.

$$(3x - 4)(7x - 5) = 0$$

$x = \frac{4}{3}$ $x = \frac{5}{7}$

2. Expand the following expression into standard form.

$$(9x + 2)^2$$

$81x^2 + 18x + 18x + 4$

$81x^2 + 36x + 4$

3. Expand the following expression into standard form.

$$(4x + 9)(4x - 9)$$

$16x^2 - 36x + 36x - 81$

$16x^2 - 81$

4. Expand the following expression into standard form.

$$(9x - 8)(3x - 4)$$

$27x^2 - 36x - 24x + 32$

$27x^2 - 60x + 32$

5. Factor the expression.

$$49x^2 - 81$$

$$(7x - 9)(7x + 9)$$

6. Factor the expression.

$$x^2 - 15x + 56$$

$$(x - 7)(x - 8)$$

7. Solve the equation.

$$10x^2 - 9x - 12 \;=\; 5x^2 - 3x - 4$$

$$5x^2 - 6x - 8 = 0$$
$$(5x + 4)(x - 2) = 0$$
$$x = \frac{-4}{5} \qquad x = 2$$

8. Solve the equation with factoring by grouping.

$$12x^2 + 15x + 8x + 10 \;=\; 0$$

$$(3x + 2)(4x + 5) = 0$$
$$x = \frac{-2}{3} \qquad x = \frac{-5}{4}$$